

REMARKS

Entry of the foregoing and reconsideration of the subject application are respectfully requested in light of the amendments above and the comments which follow.

As correctly noted in the Office Action Summary, claims 1-31 were pending (with claims 11-31 being withdrawn from consideration). By the present response, claim 1 has been amended and claims 3-4 canceled. Thus, upon entry of the present response, claims 1-2, 5-10 remain pending (with claims 11-31 being withdrawn from consideration) and await further consideration on the merits.

Support for the foregoing amendments can be found, for example, in at least the following locations in the original disclosure: the original claims and the specification, page 7.

ELECTION/RESTRICTION REQUIREMENT

The Examiner has required restriction between the inventions of Group I, claims 1-10 drawn to a coated sprocket, and Group II, drawn to a method of coating a sprocket.

Applicants confirm the provisional election of Group I, claims 1-10, for prosecution. This election is made with traverse.

It is respectfully submitted that the subject matter of claims 11-31 is sufficiently related to the subject matter of claims 1-10 that a thorough search for the subject matter of any one group would necessarily encompass a search for the subject matter of the remaining groups. Thus, it is respectfully submitted that the search and examination of the entire application could be performed without serious

burden. MPEP §803 clearly states that "If the search and examination of an entire application can be made without serious burden, the Examiner must examine it on its merits, even though it includes claims to distinct or independent inventions" (emphasis added). It is respectfully submitted that this policy should apply in the present application in order to avoid unnecessary delay and expense to Applicants in duplicative examination by the Patent Office.

The Examiner is respectfully requested to reconsider and withdraw the Restriction Requirement and to examine claims 1-2 and 5-31 in this application.

OBVIOUSNESS-TYPE DOUBLE PATENTING

Claims 1-10 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6, 26-31 and 34 of co-pending U.S. Patent Application No. 10/090,617 in view of U.S. Patent No. 6,414,258 to Amano on the grounds set forth in paragraph 10 of the Official Action. Submitted herewith is a properly executed Terminal Disclaimer over U.S. Patent Application No. 10/090,617. Accordingly, the rejection is moot and should be withdrawn.

CLAIM REJECTIONS UNDER 35 U.S.C. §102

Claims 1-4, 6 and 8-10 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,414,258 to Amano (hereafter "*Amano*") on the grounds set forth in paragraph 12 of the Official Action. For at least the reasons noted below, this rejection should be withdrawn.

Amano discloses applying a weld overlay containing hard particles to an outer peripheral contact surface of a sprocket (see Abstract). The weld overlay is formed from a welding wire designated as KC-50 and available from Kawasaki Steel Corp (see Col. 14, lines 17-19). Hard particles, such as WC-Co, are fed to the molten weld pool.

To anticipate a claim, the reference must teach all of the elements of the claim. See MPEP § 2131. Comparing the disclosure in *Amano* to the claims of the present application at issue here, the *Amano* patent does not disclose, teach or suggest several features of independent claim 1.

For example, the overlay in *Amano* is formed by the weld material with hard particles distributed in the weld matrix. This is not an alloy as claimed. Rather, this is a composite material, having a matrix of weld material and hard particles that form precipitated carbide in the matrix (see, claim 16 and col. 17, lines 51-62)

Furthermore, even if it were to be considered an alloy, the overlay in *Amano* does not have the claimed composition. As seen in the accompanying specification sheet for KC-50, the weld wire has a composition that includes 0.03 % C, 0.70 % Si, 1.60 % Mn, 0.010 % P, 0.0004 % S, and 0.005 % Al, 0.21 % Ti and 0.0005 % Ca (in mass %) (see Table 1 of the specification sheet). This composition does not have the composition as claimed and does not include at least the nickel content. Even if one considers the WC-Co hard particles added to the weld pool as contributing to the composition of the overlay alloy in *Amano*, the presently claimed composition does not result in that at least nickel is absent from the composition.

In light of at least the above noted differences, Applicants respectfully submit that an anticipatory rejection is improper since *Amano* does not disclose the invention as claimed.

Claims 1 and 7 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,425,222 to Crain (hereafter "*Crain*") on the grounds set forth in paragraph 14 of the Official Action. For at least the reasons noted below, this rejection should be withdrawn.

Crain discloses an underwater weed cutting apparatus. The apparatus has drive sprockets 134 and outer sprockets 138 which are "nickel plated or nylon sprockets" (col. 5, line 8).

To anticipate a claim, the reference must teach all of the elements of the claim. See MPEP § 2131. Comparing the disclosure in *Crain* to the claims of the present application at issue here, the *Crain* patent does not disclose, teach or suggest several features of independent claim 1.

For example, the sprockets of *Crain* are nickel plated. Nickel plating typically applies a coating of pure nickel on a substrate by, for example, electroplating or electroless plating from a bath. Thus, the disclosure of a nickel plated sprocket in *Crain* does not include a disclosure of a coating having the claimed composition, including an iron-based alloy comprising at least 60 weight % iron, and nickel.

In light of at least this difference, Applicants respectfully submit that an anticipatory rejection is improper since *Crain* does not disclose the invention as claimed.

Claims 1-2 and 5 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,879,743 to Revankar (hereafter "*Revankar*") on the grounds set forth in paragraph 16 of the Official Action. This rejection is moot in view of the amendments to claim 1 by which the features of claims 3 and 4 have been incorporated into claim 1. Because claims 3 and 4 have not been rejected here, amended claim 1 with the features from these claims should also not be rejected here. Withdrawal of the rejection is respectfully requested.

CLAIM REJECTIONS UNDER 35 U.S.C. §103

To establish a prima facie case of obviousness, three criteria must be met including establishing a suggestion or motivation to modify the reference or to combine the teachings, establishing a reasonable expectation of success for the proposed modification or combination, and showing that the references teach or suggest all of the claimed features. See, MPEP §2142-43. Here, each of the rejections should be withdrawn because a prima facie case of obviousness has not been established.

Claims 1-10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Amano* in view of U.S. Patent No. 2,271,172 to Heaslet (hereafter "*Heaslet*") on the grounds set forth in paragraph 19 of the Official Action. These rejections are deficient in that the references have not been shown to teach or suggest all of the claimed features.

For example and as noted above, at best, the composition of the overlay in *Amano* lacks at least the nickel component. *Heaslet* does not disclose a composition that would serve to disclose, teach or suggest either a substitute alloy

composition to overcome this deficiency in *Amano* or a modification of the *Amano* composition to include nickel. Accordingly, the proposed combination does not disclose, teach or suggest all of the claimed features and the rejection should be withdrawn.

Claims 1-10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Revankar* in view of applicant's disclosure of the prior art or *Amano* on the grounds set forth in paragraph 21 of the Official Action. These rejections are deficient in that the references have not been shown to teach or suggest all of the claimed features.

For example, *Revankar* is silent as to induction hardening the surface hardened zone as presented in claim 1. It should be noted that hardening the entire sprocket is expensive and causes distortions in the geometry. However, induction hardening limited to the surface layer does not result in the distortions observed by other methods while still providing a hard base layer and improved metallurgical properties. *Amano* does not disclose induction hardening such that the reference would have served to disclose, teach or suggest either a substitute replacement heat treatment to overcome the noted missing feature in *Revankar* or a modification of the *Revankar* disclosure to include induction hardening. Accordingly, the proposed combination does not disclose, teach or suggest all of the claimed features and the rejection should be withdrawn.

CONCLUSION

From the foregoing, further and favorable action in the form of a Notice of Allowance is earnestly solicited. Should the Examiner feel that any issues remain, it is requested that the undersigned be contacted so that any such issues may be adequately addressed and prosecution of the instant application expedited.

Respectfully submitted,

BUCHANAN INGERSOLL PC

Date: September 1, 2005

By: 

Jeffrey G. Killian

Registration No. 50,891

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620